

CLAIMS

What is claimed is:

- 5 1. A waterproof patient handset, comprising:
 an enclosure;
 a speaker contained within the enclosure, the enclosure comprising a
 plurality of holes sufficient to allow sound to pass from the speaker through the
 enclosure; and
10 a foil placed on the enclosure over the holes, and attached to the enclosure
 at the foil's perimeter such that the foil seals the speaker against intrusion by a
 liquid.
- 15 2. The handset of claim 1, the foil acting as a second membrane for the speaker.
3. The handset of claim 1, the foil being round and being glued only at about the
 outer 2 to 3 mm of the foil.
- 20 4. The handset of claim 1, the enclosure having about thirty of said holes, each hole
 having a diameter of about 1 mm.
- 25 5. The handset of claim 1, further comprising:
 a protection plate which sits between the enclosure and the speaker,
 providing mechanical protection for the speaker, the protection plate comprising a
 plurality of holes which allow the passage of sound, said holes being offset from
 the holes in the enclosure.
6. The handset of claim 5, the protection plate also serving as a magnetic shield.

7. The handset of claim 1, the enclosure comprising a first cover and a second cover, the second cover having at least one boss which is inserted through a hole in a printed circuit board (PCB), the boss having a deformable rib.
- 5 8. The handset of claim 7, the PCB deforming the rib when the PCB is pressed with the first cover against the rib.
9. A waterproof patient handset, comprising:
an enclosure;
10 a speaker contained within the enclosure, the enclosure comprising a plurality of holes sufficient to allow sound to pass from the speaker through the enclosure;
a foil placed on the enclosure over the holes, and attached to the enclosure at the foil's perimeter such that the foil acts as a second membrane for the
15 speaker, the foil sealing the speaker against intrusion by a liquid; and
a magnetic shield located between the enclosure and the speaker,
providing mechanical protection for the speaker, the magnetic shield comprising a plurality of holes which allow the passage of sound, said holes being offset from the holes in the enclosure.
- 20 10. The waterproof patient handset of claim 9, the enclosure comprising a first cover and a second cover, and the second cover having at least one boss which is inserted through a hole of a printed circuit board (PCB), said boss having at least one deformable rib which is deformed when the PCB is pressed with the first
25 cover against the rib, until the first cover meets the boss.
11. A waterproof patient handset, comprising:
enclosure means;
audio means contained within the enclosure means, the enclosure means
30 allowing sound to pass from the audio means through the enclosure means;

waterproofing means placed on the enclosure means, said waterproofing means acting as a second membrane for the audio means; and

protection means located between the enclosure means and the audio means, providing mechanical protection for the audio means and allowing passage of sound from the audio means to the waterproofing means.

12. The waterproof patient handset of claim 11, the enclosure means comprising a front cover and a back cover, the back cover having fastening means which are deformed when a printed circuit board (PCB) is pressed with the front cover, the front cover being fastened to the back cover using said fastening means, the PCB being installed therein, such that the distance between a top surface of the PCB and the front cover is within a certain margin of error regardless of the PCB's thickness.

13. A method for waterproofing a patient handset, comprising:
enclosing a speaker within the handset;
providing a plurality of holes in the handset enclosure sufficient to allow sound to pass from the speaker through the enclosure; and
placing a foil on the enclosure over the holes by attaching the foil to the enclosure at the foil's perimeter such that the foil acts as a second membrane for the speaker, the foil sealing the speaker against intrusion by a liquid.